



FACTS AT A GLANCE

Glossary of Telecommunications Terms

Texas Legislative Council
April 2005

Glossary of Telecommunications Terms

Prepared by
Chris Kuykendall
Research Division
Texas Legislative Council

Published by the
[Texas Legislative Council](#)
P.O. Box 12128
Austin, Texas 78711-2128



Lieutenant Governor David Dewhurst, Joint Chairman
Speaker Tom Craddick, Joint Chairman
Mark Brown, Interim Executive Director

April 2005

The mission of the Texas Legislative Council is to provide professional, nonpartisan service and support to the Texas Legislature and legislative agencies. In every area of responsibility, we strive for quality and efficiency.

Copies of this publication have been distributed in compliance with the state depository law (Subchapter G, Chapter 441, Government Code) and are available for public use through the Texas State Publications Depository Program at the Texas State Library and other state depository libraries. An online version of this publication can be found at <http://www.tlc.state.tx.us>.

Additional copies of this publication may be obtained from House Document Distribution:

In person: Room B.324, Robert E. Johnson, Sr., Legislative Office Building
1501 N. Congress Avenue

By mail: P.O. Box 12128, Austin, TX 78711-2128

By phone: (512) 463-1144

By fax: (512) 463-2920

By online request form (legislative offices only): <http://isntdnp1/FormsReq/MForms.nsf?opendatabase&login>

Introduction

In 1997, the Texas Legislative Council published a *Glossary of Telecommunications Terms*, which compiled vocabulary largely relating to the recent deregulation of local telephone service. The telecommunications industry has changed rapidly as has the terminology accompanying that change, and the council was asked to revise the glossary to bridge the gap between 1997 and 2005. The revision covers telephones, television, computers, wireless and satellite, and combinations of the same, and includes several privacy, emergency communications, and library-related terms. It also addresses related historical, legal, regulatory, and technical vocabulary.

The glossary contains terms sifted principally from the books and reports listed in the Bibliography and Webliography section.

List of Terms

Access charges

Charges assessed by local telephone companies at both ends of a long-distance telephone call to a long-distance company for its use of their local exchange facilities for the origination and termination of interexchange calls. State regulators set the access charges for intrastate long-distance calls, and federal regulators set the access charges for interstate long-distance calls. In the case of resale companies that connect customers through local telephone company lines, access charge payments go to the telephone company whose infrastructure is being used, rather than to the resale companies. End users also pay their local telephone company a monthly access charge, known variously as a customer access line charge (CALC) or subscriber line charge (SLC). (See also **Customer access line charge (CALC)**, **Subscriber line charge (SLC)**, **Local exchange carrier (LEC)**, **Interexchange carrier (IXC)**, **Facilities-based**, **Resale**, and **Unbundled network elements (UNEs)**.)

Access code call

A telephone call involving the dialing of an access code to reach a particular long-distance provider, or a call involving the dialing of a toll-free access code such as a 1-800 call.

Access line

Same as **Local loop**.

ADAD

See **Automatic dial announcing device (ADAD)**.

ADSL

See **Asymmetric digital subscriber line (ADSL)**.

Advanced services

As defined by the Federal Communications Commission, high-speed, switched, broadband telecommunications services that enable users to originate and receive high-quality voice, data, graphics, and video, using any technology. As defined in Texas by Section 55.014, Utilities Code, any telecommunications service other than residential or business basic local exchange telephone service, caller-ID service, and customer calling features. The section requires a company serving both urban and rural areas to provide in the rural areas advanced services that are reasonably comparable to those provided in urban areas. (See also **Broadband** and **Switch**.)

Analog

A type of information transmission or storage system by which signals are propagated as continuously varying electromagnetic waves. The term is so named, with respect to voice or sound transmission, because in a medium showing sound vibrations visually as waves (e.g., oscilloscope screen, phonograph record grooves), the vibrations so visualized are analogous to

the actual sound waves, with the signals in both acoustical and electrical forms varying along the parameters of amplitude and frequency. The term also may be used as an adjective. Analog signals, which tend to degrade as they travel from the origination point, are usually found in older telecommunications networks and are being replaced by digital technology. (See, in contrast, **Digital**.)

ANI

See **Automatic number identification (ANI)**.

Asymmetrical digital subscriber line (ADSL)

Referring to DSL technology designed to deliver more bandwidth downstream (i.e., capacity for faster data transfer from a central source to a customer site) than upstream. Most ADSL capacity is devoted to the distribution of audio-video to consumers. (See also **Bandwidth**, **Digital subscriber line (DSL)**, **High bit rate digital subscriber line (HDSL)**, **Downstream**, and **Upstream**.)

Automatic dial announcing device (ADAD)

The type of equipment generally used to send an unsolicited recorded message to a home or workplace telephone or answering machine. ADAD is defined statutorily in Section 55.121, Utilities Code, and associated solicitation requires a permit from the Public Utility Commission of Texas. (See also **No call lists**.)

Automatic number identification (ANI)

Equipment that automatically records the number from which a telephone call is placed and forwards it to other equipment to bill the call or to identify the location from which a 9-1-1 or other emergency call originated. Widespread cellular phone use has made ANI a policy issue, prompting legal and technical adjustments by government and industry to enable mobile 9-1-1 callers to be pinpointed geographically.

Baby Bells

Same as **Regional Bell operating companies (RBOCs)** or **Regional holding companies (RHCs)**. (See, in contrast, **Bell operating companies (BOCs)**.)

Backbone

See **Internet backbone**.

Band (frequency)

The range of frequencies between two defined limits measured in Hertz, Kilohertz, Megahertz, or Gigahertz. (See, for example, **Very high frequency (VHF)**. See also **Frequency**, **Hertz (Hz)**, **Kilohertz (KHz)**, **Megahertz (MHz)**, and **Gigahertz (GHz)**.)

Band (long-distance telephone calling service area)

With respect to distance sensitive pricing, one of several geographic rings of call-destination territory, each increasingly distant from the caller. The same per-minute charge applies anywhere within the same ring or service area. The term originally referred to AT&T's Wide Area Telecommunications Service (WATS) bands. (See also **Distance sensitive**.)

Band (regulated rate range)

A range of customer prices for a telecommunications service defined by specific minimum and maximum rate levels. The regulated service provider may set rates at any point within the defined band. The rates thus are described as banded rates.

Banded rates

See **Band (regulated rate range)**.

Bandwidth

As used most frequently, the capacity of a telecommunications pathway (i.e., a computer connection, communications channel, network, or transmission line), which determines how much data the pathway can handle in a given time and consequently how fast information traveling through it can be accessed. Bandwidth is typically measured in bits per second in digital communications and in hertz in analog communications. (See also **Frequency**, **Spectrum**, **Digital**, and **Analog**.)

Base amount

As defined and referenced in Sections 283.053 and 283.055, Local Government Code, an amount determined by the Public Utility Commission of Texas, based on certain compensation and allocation formulas, to establish a fee-per-access line rate that each municipality may charge a telecommunications provider.

Basic local telecommunications service (BLTS)

As defined by Section 51.002, Utilities Code, the combination of flat rate residential and business local exchange telephone service, directory listing and provision of a directory, tone dialing, access to an operator, directory assistance, access to 9-1-1, the ability to report service problems seven days a week, lifeline services, and any other service determined by the Public Utility Commission of Texas. (See, in comparison, **Plain old telephone service (POTS)** and **Basic network services**. See also **Lifeline**.)

Basic network services

As defined by Section 58.051, Utilities Code, a telephone classification including flat rate residential local exchange service, residential directory listing and directory provision, residential tone dialing, access to 9-1-1, lifeline services, direct inward dialing for basic residential service, call trap and trace service, mandatory residential extended area service arrangements, mandatory residential extended metropolitan service or other mandatory residential toll-free calling arrangements, residential call waiting, private pay telephone access, and a service connection for

basic residential service. Originally, under House Bill 2128, basic network services included a somewhat different list and were also called Basket I. Associated telephone rates were capped for four years for a company that elected incentive regulation. Present law continues to govern how rates for basic network services may be adjusted. Each basic network service must be offered as a separately tariffed service in addition to any packages or pricing flexibility offerings including various such services. (See also **House Bill 2128 (PURA95)**, **Lifeline**, **Direct inward dialing (DID)**, **Extended area service**, **Extended metropolitan service**, **Incentive regulation**, and **Nonbasic services**. See, in comparison, **Basic local telecommunications service (BLTS)** and **Plain old telephone service (POTS)**.)

Basic service tier

A cable television term better known as basic cable, involving the tier of channels that are available to all cable customers served in a locality by a cable company. Other tiers include premium channels for which there is an extra charge. The rates for the basic service tier are the only rates currently regulated, and that regulatory authority is vested in the local franchising authorities, which enforce rate regulations adopted by the Federal Communications Commission. (See also **Local franchising authority (LFA)**.)

Bell operating companies (BOCs)

The 22 companies created out of the former Bell System when the system was split by divestiture, beginning in 1984. The 22 were grouped into seven **Regional holding companies (RHCs)**, more commonly known as **Regional Bell operating companies (RBOCs)** or **Baby Bells**. Under the terms of divestiture, BOCs were limited to local telephone service and other ventures subject to FCC approval and were expressly prohibited from providing long-distance services and from manufacturing equipment. Many of those restrictions have since been lifted. (See also **Divestiture** and **Modified final judgment (MFJ)**.)

Billing and collection service

A service provided by an incumbent local exchange company (ILEC) to another telecommunications utility, in which the ILEC bills and collects from the other utility's customers on that utility's behalf. (See also **Incumbent local exchange company (ILEC)**.)

Bit

The smallest unit of information in the binary system used to transmit digital data. A single alphabetic or numeric character is typically represented by ten bits. The rate of transmission is based upon the number of bits transmitted per second. (See also **Kilobit**, **Megabit**, **Gigabit**, and **Bit rate**.)

Bit rate

The number of bits transmitted in a specified length of time. This rate is usually expressed in kilobits per second (Kbps). (See also **Bit** and **Kilobit**.)

BLTS

See **Basic local telecommunications service (BLTS)**.

BOCs

See **Bell operating companies (BOCs)**.

BPL

See **Broadband over power line (BPL)**.

Brand X

A legal case involving Brand X Internet Services, a company in Santa Monica, California, heard by the U.S. Supreme Court on March 29, 2005, with a ruling to follow in a few months. At issue is the regulatory classification of high-speed Internet service provided over cable modems with implications regarding whether the infrastructure will be open to other Internet service providers in the same manner that incumbent local exchange carriers' telephone line infrastructure is open to competitive local exchange carriers. In October 2003, a three-judge panel of the U.S. Ninth Circuit Court of Appeals, ruling contrary to the positions of the Federal Communications Commission and U.S. Department of Justice, issued an opinion that cable modem broadband service is both an information service (a service subject to minimal federal regulation) and a telecommunications service as defined by the federal Telecommunications Act of 1996 (a service subject to substantial federal regulation). The case also has implications for the regulatory future of Internet-based telephone service and for the funding of the federal Universal Service Fund. (See also **Information service**, **Telecommunications service**, **Cable modem**, **Cable service**, **Voice over Internet Protocol (VoIP)**, **Universal Service Fund (USF)**, **Internet service provider (ISP)**, **Incumbent local exchange carrier (ILEC)**, and **Competitive local exchange carrier (CLEC)**.)

Broadband

According to the Federal Communications Commission (FCC), telecommunications transmission capacity in excess of 200 kilobits per second in the last mile, in both the upstream and downstream directions. The FCC chose this standard because it represents adequate capacity to transmit full-motion video and make changing web pages comparable in speed to turning pages in a book. Other authorities set different, much higher technical thresholds for technologies that qualify as broadband technology, such as the International Telecommunication Union's minimum 1.5 to 2.0 megabits per second, which is recommended for telemedicine, distance learning, and movies on demand. Generally, however, the term is meant to encompass transmission capacity that supports high-speed, always-on Internet access, which is generally available via cable modem service, digital subscriber lines, fixed wireless, and satellite technologies. (See, in contrast, **Narrowband**. See also **Bit rate**, **Last mile**, **Upstream**, and **Downstream**.)

Broadband over power line (BPL)

Emerging technology by which Internet data is transmitted over electric utility power lines. In response to comments from amateur radio operators and others, the Federal Communications Commission in 2004 adopted BPL regulations aimed at preventing radio interference by the technology. (See also **Exempt telecommunications company (ETC)**.)

Browser

Software that translates digital bits into pictures and text to make them viewable as web pages. A browser displays documents stored on the Internet to one's computer.

Build-out

A term commonly used to refer to the geographic expansion of telecommunications infrastructure by a facilities-based carrier. (See also **Facilities-based**.)

Bundling

The combining of several telecommunications services into one package for the customer. The broadest example might be a package combining telephone, television, Internet, and e-mail availability. Bundling can present certain legal difficulties if it combines regulated and unregulated services, in which case the ratemaking authority of the Public Utility Commission of Texas consists of ensuring that a rate for the package is not predatory. (See also **Unbundling**.)

Bypass

The use of alternative communications means to avoid the local network of the incumbent local exchange carrier, particularly to connect directly to a selected interexchange carrier. (See also **Incumbent local exchange carrier (ILEC)** and **Interexchange carrier (IXC)**.)

Cable modem

A device to enable transmitting and receiving computer information over one's cable television line. (See also **Coaxial cable**, **Cable service**, **Information service**, and **Open access**.)

Cable service

As defined by federal law (47 U.S.C. Section 522), the one-way transmission to subscribers of video programming, or other programming service, and the subscriber interaction, if any, that is required for the selection of such video programming or programming service. Cable television is a cable service and is regulated largely by local franchising authorities. Both the Federal Communications Commission (FCC) and federal courts, the latter most recently in the Brand X case, have agreed that cable modem service is not a cable service, although there is disagreement as to whether cable modem service is solely an information service or is both an information service and a telecommunications service. (See also **Cable modem**, **Local franchising authority (LFA)**, **Information service**, **Telecommunications service**, and **Brand X**.)

CALC

See **Customer access line charge (CALC)**, or **Subscriber line charge (SLC)**.

Caller ID

A service that supplies the recipient of a telephone call with the caller's telephone number, or identifies an individual who is associated with that number, allowing the screening of incoming calls. Caller ID was initially approved in Texas in 1992. Caller ID is an optional service that is available to customers and is different from automatic number identification (ANI), which provides a carrier or other business with a billing number or provides a public safety answering point with the caller's location. (See also **ANI**.)

CALLS Order

An order by the Federal Communications Commission, issued in 2000 and prompted by a proposal to revise interstate access charges, submitted by the Coalition for Affordable Local and Long Distance Services. It eliminated the presubscribed interexchange carrier charge except for businesses with multiple phone lines, for whom the charge was capped. (See **Presubscribed Interexchange Carrier Charge (PICC)**.)

Carrier current

Referring to a system that conducts information signals over electrical wiring or power lines. (See, for example, **Broadband over power line (BPL)**.)

Carterfone decision

A major early crack in the former Bell system regulated monopoly, a decree by which the Federal Communications Commission in 1968 allowed the attachment of non-Bell equipment to the end of the telephone line. The Carterfone for which the decision was named was a device to connect a two-way mobile radio system to the telephone network. The Bell system had threatened to suspend service to customers who installed it. (See also **Consumer premises equipment (CPE)**.)

CCN

See **Certificate of convenience and necessity (CCN)**.

Cell

The basic geographic unit of a cellular telephone system, derived from the honeycomb or hexagonal pattern of the units within the larger grid. A locality is divided into cells, each with a low-power transmitter (a base station consisting of a tower and a small building housing radio equipment), to avoid the creation of radio frequency interference across a large area. Each carrier serving the locality also runs a central mobile telephone switching office that handles all of the phone connections to the regular land-line telephone system and controls all of the base stations in the locality, determining which frequency a call will use in each cell through which the signal passes. When a call is made from a phone that is crossing cell boundaries, as from a moving vehicle, the signal is routed through several base stations, using a certain frequency in one cell, being passed on to an adjacent cell where it uses another frequency, and so on through succeeding cells traversed by the mobile device, sometimes reusing the same frequency as in the original cell but without interference. (See also **Cellular telephone service**.)

Cellular telephone service

A mobile telephone system that subdivides a locality into many cells, employing low-power radio transmitters and limiting the geographic range of each frequency being used so as to provide much greater capacity than older mobile systems through the extensive simultaneous use of the same frequencies across the locality. Calls to and from cellular telephones can be connected into the public switched telephone network. (See also **Cell**, **Roaming**, **Roaming charges**, **Home coverage area**, and **Public switched telephone network (PSTN)**.)

Central office

The local telephone company facility where subscriber lines are terminated at a switching unit, from which telephone call connections can be made to other local and long-distance points, such as another local subscriber or another central office. (See also **Subscriber** and **Switch**.)

Centrex

A telephone call handling system with capital equipment located at a local telephone company central office, automated to allow a business or organization, with or without receptionists at its premises, to support telephone extensions off a main telephone line. Centrex differs from **Private branch exchange (PBX)**, in which the equipment is located on the customer's premises. Centrex, without the capital investment, can be more affordable in the short run. PBX, however, confers ownership. (See also **Central office** and **Private branch exchange (PBX)**.)

Certificate of convenience and necessity (CCN)

The type of certificate issued by the Public Utility Commission of Texas to an incumbent local exchange carrier. The holder of a CCN generally has responsibility as the provider of last resort in its defined geographic area regardless of whether another provider has a certificate of operating authority or service provider certificate of operating authority for that area. (See also **Incumbent local exchange carrier (ILEC)**, **Provider of last resort**, **Certificate of operating authority (COA)**, **Service provider certificate of operating authority (SPCOA)**, and **Certificated telecommunications utility (CTU)**.)

Certificate of operating authority (COA)

A type of certificate issued by the Public Utility Commission of Texas under Subchapter C, Chapter 54, Utilities Code, to a regulated company other than an incumbent local exchange carrier, namely a competitive local exchange carrier (CLEC). House Bill 2128 created the COA as well as the service provider certificate of operating authority (SPCOA). The legislative intent in distinguishing the two was to reserve COAs principally for facilities-based CLECs and to reserve SPCOAs for resale CLECs only. The distinction has been largely eroded. (See also **House Bill 2128 (PURA95)**, **Service provider certificate of operating authority (SPCOA)**, **Facilities-based**, **Resale**, **Build-out**, **Incumbent local exchange carrier (ILEC)**, **Competitive local exchange carrier (CLEC)**, and **Certificate of convenience and necessity (CCN)**.)

Certificated telecommunications provider (CTP)

As defined in Texas by the Local Government Code, an entity that has been issued a certificate of convenience and necessity, certificate of operating authority, or service provider certificate

of operating authority to offer local exchange telephone service. The term is used in the code with reference to a municipality's management of and compensation for right-of-way that is used for telecommunications purposes. (See also **Certificate of convenience and necessity (CCN)**, **Certificate of operating authority (COA)**, **Service provider certificate of operating authority (SPCOA)**, and **Base amount**. See, in comparison, **Certificated telecommunications utility (CTU)**.)

Certificated telecommunications utility (CTU)

As defined in Texas by the Utilities Code, a telecommunications utility that has been granted a certificate of convenience and necessity, a certificate of operating authority, or a service provider certificate of operating authority. A cellular telephone company is none of these, but rather is a commercial mobile service provider regulated by the Federal Communications Commission. (See also **Certificate of convenience and necessity (CCN)**, **Certificate of operating authority (COA)**, **Service provider certificate of operating authority (SPCOA)**, **Commercial mobile radio service (CMRS)**, and **Commercial mobile service provider (CMSP)**. See, in comparison, **Certificated telecommunications provider (CTP)**.)

Checklist

A set of 14 requirements, from Section 271 of the federal Telecommunications Act of 1996, that a Bell operating company had to satisfy before it could gain entry to the interLATA long-distance market. The Federal Communications Commission at the end of June 2000 cleared Southwestern Bell Texas (SBC Texas) for such market entry. The company's commitments with respect to that clearance were incorporated in the Texas 271 Agreement (T2A), an interconnection agreement approved by the Public Utility Commission of Texas. Bell operating companies generally, throughout the nation, were cleared for entry at the end of 2003. (See also **InterLATA**, **Bell operating companies (BOCs)**, **Section 271**, and **Interconnection**.)

Children's Online Privacy Protection Act of 1998 (COPPA)

A federal statute that makes it unlawful for a website operator to collect personal information from a child under age 13 except pursuant to Federal Trade Commission regulations. (15 U.S.C. Section 6501 et seq.)

CLEC

See **Competitive local exchange carrier (CLEC)**.

CMRS

See **Commercial mobile radio service (CMRS)**.

COA

See **Certificate of operating authority (COA)**.

Coaxial cable

A transmission cable consisting of a copper core, surrounded by an insulator, a grounded shield of braided wire, and an outer protective jacket. It is called coaxial because it comprises two channels (the copper core carrying the signal and the braided wire shield serving as ground) running along the same axis. Coaxial cable can transmit at a much greater bandwidth than a plain twisted pair of wires and can carry large numbers of individual circuits by combining several communications channels into one transmission path. (See also **Twisted pair** and **Cable modem**.)

Collocation

With respect to telephones, referring to the practice whereby competing local exchange carriers, interexchange carriers, bypass companies, or Internet service providers locate their equipment in the central office of an incumbent local exchange carrier. The federal Telecommunications Act of 1996 includes collocation requirements to enable interconnection and access to unbundled network elements. (See also **Incumbent local exchange carrier (ILEC)**, **Central office**, **Competing local exchange carrier (CLEC)**, **Interexchange carrier (IXC)**, **Bypass**, **Internet service provider (ISP)**, **Interconnection**, and **Unbundled network elements (UNEs)**.)

Commercial mobile radio service (CMRS)

A Federal Communications Commission designation referring to a wireless service that connects to the public switched telephone network and is operated for profit. (See also **Commercial mobile service provider** and **Public switched telephone network (PSTN)**.)

Commercial mobile service provider

A provider of commercial mobile radio service. The term is defined by Texas law in Section 57.042, Utilities Code. (See also **Commercial mobile radio service (CMRS)**.)

Commission on State Emergency Communications

The Texas state agency that has jurisdiction over 9-1-1 communications and imposes the emergency service fee and the equalization surcharge. (See also **Emergency service fee** and **Equalization surcharge**.)

Common carrier

In a telecommunications context, a company that is recognized and typically regulated by a state or federal regulatory agency as a furnisher of communications service to the general public. (Compare with **Certificated telecommunications utility (CTU)**, which is limited to certain companies regulated by the Public Utility Commission of Texas.)

Communications Act of 1934

The principal federal statute regulating telecommunications before its amendment by the federal Telecommunications Act of 1996 and the enactment that established the Federal Communications Commission (FCC), consolidating federal regulation of wired and wireless

services. The 1934 act supplemented state regulation of telephones with federal regulation of interstate calls (which at that time accounted for only two percent of all long-distance calls). It established telephone universal service as a goal and served as the basis for treating separations and settlements issues. It maintained federal regulatory control over radio broadcasting, including spectrum use by nonfederal radio stations, common carriers, and private entities and individuals and transferred spectrum regulation to the FCC from the former Federal Radio Commission. Television eventually was regulated under the act in a manner similar to radio. (See also **Federal Communications Commission, Universal service, Separations and settlements, Spectrum, Spectrum Auction, and Telecommunications Act of 1996.**)

Competitive access provider (CAP)

A company that provides an alternative, often superior, connection between a telephone user and the long-distance service of an interexchange carrier (IXC), thereby bypassing the lines of the incumbent local exchange carrier. Typically, a CAP operates in a metropolitan area containing a high density of potential business customers, using a high capacity fiber optic ring to link client businesses with the IXC point of presence. With the easing of state and federal regulatory constraints and the opening of local exchanges to competition, many CAPs have become competitive local exchange carriers. (See also **Bypass, Interexchange carrier (IXC), Incumbent local exchange carrier (ILEC), Competitive local exchange carrier (CLEC), and Point of presence (POP).**)

Competitive local exchange carrier (CLEC)

The type of company that House Bill 2128 and the federal Telecommunications Act of 1996 were intended to encourage to compete with incumbent local exchange carriers (ILECs) who were the carryover local telephone companies from pre-divestiture. CLECs were to have the opportunities to engage in resale, to lease unbundled network elements from the ILECs, and to move toward becoming facilities-based carriers with their own systems. CLECs include cellular companies, competitive access providers, Internet service providers, cable television providers, and others. A company that obtains a certificate of authority or a service provider certificate of authority from the Public Utility Commission of Texas is considered a CLEC. (See also **House Bill 2128 (PURA95), Incumbent local exchange carrier (ILEC), Unbundling, Unbundled network elements (UNEs), Certificate of authority (COA), and Service provider certificate of authority (SPCOA).**)

Computer I

A 1971 Federal Communications Commission ruling, as telephone and computer systems began to interact, establishing the boundary lines between what was regulated communications and what was unregulated data processing. Whether a service was regulated or not depended on its primary use, either communications or data processing.

Computer II

A 1980 Federal Communications Commission ruling that deregulated all data processing and telephone terminals, thus detaching customer premises equipment (CPE) from the Bell system's regulated monopoly. The commission allowed AT&T, the Bell system parent company, to provide CPE and enhanced services only through a fully separate subsidiary, with restrictions

on permissible interaction between itself and the unregulated affiliate. The same limitation regarding CPE and enhanced services transferred to the Bell operating companies when they were created by the 1984 divestiture of the Bell system. The ruling essentially redefined the regulated industry to stop at the end of the connection to the customer's premises; customers could pay for ordinary telephone service and connect any kind of equipment to it without paying additional charges to the company. (However, see **Computer III**. See also **Customer premises equipment (CPE)** and **Enhanced services**.)

Computer III

A 1986 Federal Communications Commission ruling that relaxed somewhat the restrictions Computer II had placed on the Bell operating companies (BOCs), allowing them in the name of efficiency to better integrate basic (telephone) communications and enhanced (computer) services, subject to certain safeguards to prevent anticompetitive behavior. (See also **Computer II** and **Enhanced services**.)

Contribution factor

The specified percentage of their interstate and international revenues paid into the federal Universal Service Fund by telecommunications companies that provide interstate and international services. The contribution factor is set quarterly by the Federal Communications Commission and was, on the date of this publication, set at 10.7 percent for the first quarter of 2005. Traditional telephone companies, wireless companies, paging companies, and pay phone providers pay the specified percentage. (See also **Universal Service Fund (USF)**.)

Cookies

Tiny data files that are created on a user's hard drive by a website. A cookie typically contains a unique tracking number that, when retrieved by the website's server on a subsequent visit, allows a website to identify the user, which at many websites has the virtue of enabling return visitors to the website to skip or expedite log-in, but which also has the drawback that it can be placed on the hard drive without the user's knowledge and can collect information through the user's mouse clicks at the website, raising privacy issues. Internet browsers, however, usually allow the user to refuse, remove, or turn off cookies.

COPPA

See **Children's Online Privacy Protection Act of 1998 (COPPA)**.

CPE

See **Customer premises equipment (CPE)**.

Cramming

The practice of billing telephone customers for unauthorized, unused, or nonexistent services, which was made illegal in Texas by Senate Bill 86 (Chapter 1579, Acts of the 76th Legislature, Regular Session, 1999). Rules of the Public Utility Commission of Texas established a set of basic requirements that must be met before a telephone provider can charge for any product or service on a customer's telephone bill.

Cross-subsidization

The practice of using revenues generated by one business to support below-cost pricing of another business.

CTU

See **Certificated telecommunications utility (CTU)**.

Customer access line charge (CALC)

Same as **Subscriber line charge (SLC)**.

Customer premises equipment (CPE)

With respect to telephone regulation, all the telecommunications equipment residing on a customer's premises, with the possible exception of coin-operated telephones. The term encompasses everything from telephones and answering machines to private branch exchange equipment and advanced data terminals. Legally, it is defined at 47 U.S.C. Section 153. (See also **Computer II** and **Private branch exchange (PBX)**.)

Dark fiber

Optical fiber strands through which no light is transmitted because they are not connected to transmission circuit equipment when the optical fiber cable is installed, and which consequently carry no signal. The inclusion of dark fiber by a carrier provides latitude for capacity expansion, or for sale of surplus capacity, and can prevent having to seek right-of-way more than once.

DBS

See **Direct broadcast satellite (DBS)**.

DDD

See **Direct distance dialing (DDD)**.

Detariffing

The removal of regulations requiring that a common carrier service be offered under a tariff approved by a regulatory agency. Regulatory agencies use detariffing as one tool for freeing regulated companies from price controls in a competitive market. A tariff is a legal document that a company providing interstate and international long-distance telephone service had to file with the Federal Communications Commission describing the rates, terms, and conditions of services it provided. With detariffing, that company now must make this information available to the consumer (on the company's website if it has one), making it easier for the consumer to know what the consumer is paying for the services it has ordered and what other interstate long-distance companies are charging for their services. (See also **Tariff**.)

Dialing parity

A property of telephone dialing in which all customers dial the same number of digits (i.e., without having to dial an access code of extra digits) regardless of which competing carrier they have selected. Under federal law (47 U.S.C. Section 153) the term relates more to local calls, but other sources give it a more general meaning covering all calls. (See, in comparison, **Equal access**.)

Dial-up Internet access

Slower Internet access that is achieved through normal telephone lines and a modem, as opposed to digital subscriber line, cable modem, or some other broadband means. (See also **Narrowband**, **Digital subscriber line (DSL)**, **Broadband**, and **Digital divide**.)

DID

See **Direct inward dialing (DID)**.

Digital

A type of information transmission or storage system by which signals are transformed to discrete binary code sequences for transmission or storage and then are reassembled for an exact binary reproduction at reception or retrieval. The term also may be used as an adjective. Digital signals do not degrade in the manner of analog signals. (See, in contrast, **Analog**.)

Digital divide

The socioeconomic gap between communities that have access to telecommunications technology, services, and equipment and those that do not, particularly with respect to computer and Internet access but also reflecting the relative quality of that access and the skills to make use of it. A digital divide may exist on the basis of income, ethnicity, education, or rural versus urban settings.

Digital signal, level 1 (DS-1)

See instead **Trunk level 1 (T-1)**. In the United States and Canada, the two terms are identical.

Digital signal, level 3 (DS-3)

See instead **Trunk level 3 (T-3)**. In the United States and Canada, the two terms are identical.

Digital subscriber line (DSL)

Referring to technology that transforms an existing copper wire system used for telephone voice transmission into a conduit for high-speed data traffic, using the wire's higher frequencies to transmit data and lower frequencies to transmit voice and other analog signals. DSL, unlike cable modem, offers dedicated bandwidth because the connection is not shared with other users. (See, in comparison, **Cable modem**, **Asymmetric digital subscriber line (ADSL)**, and **High bit rate digital subscriber line (HDSL)**.)

Digitalization

The conversion of analog (continuous wave) signals into a digital (binary code) format. (See also **Analog** and **Digital**.)

Direct broadcast satellite (DBS)

A satellite television system in which subscribers receive programming from a geostationary satellite, via small and relatively inexpensive dish antennas mounted on the roof or side of a house or building.

Direct distance dialing (DDD)

The placement of a long-distance call without operator assistance.

Direct inward dialing (DID)

A system allowing an outside caller to a business or other entity's main telephone number to directly contact someone at an extension number without going through a receptionist or other intermediary.

Distance education and Distance learning

A form of instruction in which telecommunications technology is used to link students and teachers, often interactively, at different physical locations. (See also **Telecommunications Infrastructure Fund (TIF)** and **Telemedicine**.)

Distance insensitive

Referring to a manner of pricing a specified telecommunications service in which the price does not depend on the distance that the voice or information travels, with no distinction between local and long-distance minutes. Charges are based on other factors such as duration or volume. (See, in contrast, **Distance sensitive**.)

Distance sensitive

Referring to a manner of pricing a specified telecommunications service in which the price depends on the distance that the voice or information travels. (See, in contrast, **Distance insensitive**.)

Divestiture

A consent decree action, effective in 1984 and resulting from a U.S. Department of Justice (DOJ) antitrust suit, that fragmented the Bell system, separating the regional holding companies and Bell operating companies from their parent AT&T company in exchange for AT&T's ability to enter previously restricted lines of business, including the manufacture of computers. The divestiture agreement, announced and approved by the courts in 1982 and known as the Modified final judgment, also imposed line-of-business restrictions on the separated companies. (See also **Regional holding companies (RHCs)**, **Regional Bell operating companies (RBOCs)**, **Bell operating companies (BOCs)**, and **Modified final judgment (MFJ)**.)

Do not call list

See **No call lists**.

Dominant carrier

As applicable to Texas law and defined in Section 51.002, Utilities Code, a provider of a communication service, wholly or partly via a telephone system, who the Public Utility Commission of Texas (PUC) determines has sufficient telecommunications market power to control prices in a manner adverse to the public interest. The PUC may regulate prices for services provided by a company it determines to have dominant carrier status and may deregulate the price of a service provided by a company it determines to have lost dominant carrier status. (See also **Market power test**.)

Downlink

The transmission link from a satellite to a ground receiving station. (See, in contrast, **Uplink**.)

Downstream

The direction of a telecommunications transmission that comes toward a client end user. A download from an Internet website moves downstream. (See, in contrast, **Upstream**.)

DSL

See **Digital subscriber line (DSL)**.

DS-1

See **Digital signal, level 1 (DS-1)**, or **Trunk level 1 (T-1)**.

DS-3

See **Digital signal, level 3 (DS-3)**, or **Trunk level 3 (T-3)**.

EAS

See **Extended area service (EAS)**.

E-commerce

See **Electronic commerce (E-commerce)**.

Education percentage discount rates (E-rates)

Discount rates for Internet access, intrastate telecommunications services, and certain internal connections, applicable to schools, libraries, and educational consortia, adopted by the Public Utility Commission of Texas and equivalent to those adopted for interstate services by the Federal Communications Commission.

802.11

See **Wireless fidelity (WiFi)**.

ELC

See **Expanded local calling (ELC)**.

Electronic commerce (E-commerce)

The sale of goods and services over the Internet.

Electronic publishing

The process of making either copyrighted or public information available via electronic format.

Eligible telecommunications provider (ETP)

A telecommunications provider designated by the Public Utility Commission of Texas as qualified to receive funding from the Texas Universal Service Fund to provide affordable telephone service in certain high-cost rural areas. (See also **Texas Universal Service Fund (TUSF)** and **Texas High Cost Universal Service Plan (THCUSP)**.)

Emergency service fee

A Texas statutory fee not to exceed 50 cents per month per local line or wireless connection, or not to exceed three percent of the monthly base rate charged by the principal service provider in certain emergency communication districts in counties with a population of more than two million, which goes toward the funding of 9-1-1 emergency service. The applicable law is found in Sections 771.071, 771.0711, and 772.114, Health and Safety Code. (See also **Equalization surcharge**.)

EMS

See **Extended metropolitan service (EMS)**.

End-to-end digital connectivity

A feature of a telecommunications transmission in which all signals are digital during their entire path through a network or circuit without conversion to or from analog at any point. (See also **Digital**.)

Enhanced services

According to the Federal Communications Commission, telecommunications services in which computer processing alters or manipulates the content of transmitted information to provide added value, or telecommunications services in which any portion of a communication

is stored longer than the time needed for its transmission, with an ability on the part of a user to interact with the stored portion. Enhanced services may be provided without filing a tariff. Examples of enhanced services include faxing, voice mail, e-mail, and Internet access service. (See also **Tariff**.)

Enhanced services provider (ESP)

A company that provides one or more enhanced services. (See **Enhanced services**.)

Equal access

A property of telephone dialing that allows a customer to place a long-distance call through the primary interexchange carrier (PIC) he or she has selected by 1+ dialing (1 followed by the area code and the local number). Before equal access, a customer might have had to dial five or more extra digits to reach that carrier and then initiate the 1+ sequence. All long-distance common carriers must provide equal access for their long-distance caller customers. Customers can still reach carriers other than their PIC by dialing the appropriate access codes. (See also **Primary interexchange carrier (PIC)**. See, in comparison, **Dialing parity**.)

Equalization surcharge

A surcharge, in addition to the emergency service fee, that is applied to Texas telephone customers who receive intrastate long-distance service. The surcharge may not exceed 1.3 percent of the charges for that service. Revenue from the surcharge, which is mandated by Section 771.072, Health and Safety Code, goes in part to support 9-1-1 service. (See also **Emergency service fee**.)

E-rates

See **Education percentage discount rates (E-rates)**.

ESP

See **Enhanced service provider (ESP)**.

ETC

See **Exempt telecommunications company (ETC)**.

ETP

See **Eligible telecommunications provider (ETP)**.

Exchange area

The local calling area of a local exchange carrier, meaning the geographic area surrounding one or more central offices in which telephone services and prices are the same. Texas has approximately 1,250 exchange areas, which are mapped in Appendix F of the 1996 *Interim Report on Telecommunications* by the Senate Committee on Economic Development. (See also **Local exchange carrier (LEC)** and **Central office**.)

Exchange prefix

The three digits of a telephone number between the three-digit area code and the four-digit subscriber number. (See also **Number conservation** and **Overlay area code**.)

Exempt telecommunications company (ETC)

Under federal law relating to public utility holding companies (15 U.S.C. Section 79z-5c), anyone determined by the Federal Communications Commission (FCC) to be engaged directly or indirectly, through one or more affiliates, exclusively in the business of providing telecommunications services, information services, other services or products subject to FCC jurisdiction, or products or services that are related or incidental to the above services. The term sometimes is used to refer specifically to a separate affiliate of an electric utility that uses the utility's fiber optic cable system to diversify into the provision of telecommunications and information services. A third, informal use in Texas refers to companies that are involved in telecommunications but are not regulated by the Public Utility Commission of Texas. (See, with respect to the federal law definition, **Federal Communications Commission (FCC)**, **Telecommunications**, **Telecommunications service**, and **Information Service**. See, in comparison, with respect to the electric utility affiliate definition, **Carrier Current** and **Broadband over Power Line (BPL)**. See also, with respect to informal usage, **Public Utility Commission of Texas (PUC)**.)

Expanded local calling (ELC)

In Texas, an arrangement by which telephone customers in certain rural exchange areas may call other nearby nonmetropolitan exchange areas with which they share a community of interest by paying a flat monthly surcharge above and beyond ordinary local service fees rather than paying usage sensitive toll charges. ELC is governed by the procedures and policies of Subchapter C, Chapter 55, Utilities Code. (See, in comparison, **Extended area service (EAS)** and **Extended metropolitan service (EMS)**. See also **Exchange area** and **Usage sensitive**.)

Extended area service (EAS)

An arrangement by which telephone customers in an exchange area may call contiguous exchange areas without paying usage sensitive toll charges. In some cases the service is available by paying a flat monthly surcharge above and beyond ordinary local service fees; in other cases the service may be considered part of the local rate. In Texas, EAS is governed by the procedures and policies of Subchapter B, Chapter 55, Utilities Code. (See, in comparison, **Extended metropolitan service (EMS)** and **Expanded local calling (ELC)**. See also **Exchange area** and **Usage sensitive**.)

Extended metropolitan service (EMS)

A variation of extended area service by which telephone customers in exchange areas surrounding a metropolitan exchange area may call into the metropolitan exchange area, and usually also receive calls from the metropolitan exchange area, by paying a flat monthly surcharge above and beyond ordinary local service fees rather than paying usage sensitive toll charges. (See, in comparison, **Extended area service (EAS)** and **Expanded local calling (ELC)**. See also **Exchange area** and **Usage sensitive**.)

Facilities-based

Referring to a telecommunications carrier that owns most of the physical facilities and infrastructure, such as switching equipment and transmission lines, that it uses to provide a service as opposed to leasing such equipment and acting in the telecommunications market as a reseller. (See also **Switch** and **Resale**.)

FCC

See **Federal Communications Commission (FCC)**.

Federal Communications Commission (FCC)

The federal agency, established originally by the Communications Act of 1934, that regulates interstate wire, cable, radio, television, and satellite communications and any such international communications originating in the United States. The FCC has powers to regulate prices, market entry, and technical standards. (See also **Communications Act of 1934**.)

Fiber optic transmission system (FOTS)

A telecommunications system that uses thin strands of glass through which light beams are transmitted and modulated to relay information. Such systems are capable of carrying very large amounts of information over long distances. (See also **Dark fiber**.)

Fixed wireless

Telecommunications transmission accomplished by means of a fixed transceiver attached to a home or office (as opposed to a mobile device such as a cell phone) to communicate by non-satellite radio signal with a telecommunications provider's central antenna site. Fixed wireless in some situations makes it possible to provide advanced services such as broadband Internet to rural and other high-cost areas more cheaply than can be done through the expansion of wire or cable infrastructure. (See also **Advanced services** and **Broadband**.)

Flat rate

Referring to customer billing in which the same amount is paid per month regardless of the amount of time the service is used. (See, in contrast, **Usage sensitive**.)

FOTS

See **Fiber optic transmission system (FOTS)**.

Frequency

The rate at which an electromagnetic waveform alternates, or the number of waves that pass a given point in a given time, equal to the speed of light divided by the wavelength. Frequency is measured in **Hertz**, where 1 Hertz is equivalent to 1 complete cycle per second. (See also **Kilohertz**, **Megahertz**, **Gigahertz**, and **Bandwidth**.)

Gateway

In telecommunications, a node including hardware and software used to connect different and otherwise incompatible networks. A gateway provides both the physical connection and the conversion necessary to communicate with the other network's protocols. (See also **Node**.)

Geographic split method

A type of area code change in which a line is drawn through an area served by an existing code, and customers on one side of the line keep that area code while those on the other side are assigned a new one. (See, in contrast, **Overlay area code**. See also **North American numbering plan (NANP)**, **Number conservation**, and **Permissive dialing**.)

GHz

See **Gigahertz (GHz)**.

Gigabit

A unit of information equal to one billion bits. (See also **Bit**, **Kilobit**, and **Megabit**.)

Gigahertz (GHz)

A unit of frequency equal to one billion hertz. (See also **Frequency**, **Hertz (Hz)**, **Kilohertz (KHz)**, and **Megahertz (MHz)**.)

Global positioning system (GPS)

A constellation of 24 orbiting satellites that make it possible for people with ground receivers to pinpoint their geographic location—including latitude, longitude, and elevation—with a high degree of accuracy. GPS can be of relevance to emergency telecommunications.

GPS

See **Global positioning system (GPS)**.

Gross receipts assessment

In Texas, a statutory assessment on a telecommunications utility equal to one-sixth of one percent of the gross receipts from rates charged consumers. The assessment, levied under Section 16.001, Utilities Code, is one that the utility is allowed to recover from its ratepayers and thus shows on the telephone bill.

HDSL

See **High bit rate digital subscriber line (HDSL)**.

HDTV

See **High definition television (HDTV)**.

Headend

In cable television systems, a control center where incoming programmatic signals are put on outgoing channels to customers.

Hertz (Hz)

A unit of frequency equal to one complete wave cycle or oscillation per second. (See also **Frequency**, **Kilohertz (KHz)**, **Megahertz (MHz)**, and **Gigahertz (GHz)**.)

HFC

See **Hybrid fiber-coaxial (HFC)**.

High bit rate digital subscriber line (HDSL)

A form of digital subscriber line technology that can carry the equivalent of a T-1 line, upstream and downstream, on a copper twisted pair cable. (See also **Digital subscriber line (DSL)**, **Upstream**, **Downstream**, **Trunk level 1 (T-1)**, and **Twisted pair**.)

High definition television (HDTV)

A relatively new standard for digital television featuring a wide rectangular screen and a high resolution of display that offers picture quality approaching that of 35-millimeter film and sound quality approaching that of a compact disc. HDTV video imaging uses as many as two million pixels. (See also **Digital**.)

Home coverage area

The defined geographical area in which cellular telephone calls are local and do not incur roaming charges or long-distance charges. (See also **Cellular telephone service**, **Roaming**, and **Roaming charges**.)

House Bill 2128 (PURA95)

A Texas enactment (Chapter 231, Acts of the 74th Legislature, Regular Session, 1995) subsequent to joint interim committee deliberations, that opened the market for local telephone service and had as its general purpose to foster the development and emergence of a competitive and advanced telecommunications environment and infrastructure. (See also **Joint Interim Committee on Telecommunications and the Public Utility Commission** and **Public Utility Regulatory Act (PURA)**.)

Hunting

The progressive sequence by which a call to a group of telephone lines is routed such that if the first line is busy, the call proceeds to the next pre-specified line, to the next one after that, and so on, until a free line is found.

Hybrid fiber-coaxial (HFC)

Referring to a cable or telephone network architecture that employs a combination of fiber optic and coaxial cable. Many cable operators have adopted HFC to increase transmission capacity, reduce noise, and provide clean two-way communication paths. (See also **Coaxial cable** and **Fiber optic transmission system (FOTS)**.)

Hz

See **Hertz (Hz)**.

ILEC

See **Incumbent local exchange carrier (ILEC)**.

IM

See **Instant messaging (IM)**.

Imputation

A regulatory policy imposed to prevent an incumbent local exchange company from selling a service or function to a competitor at a higher price than the rate that the incumbent local exchange company implicitly charges its retail customers by the inclusion of the service or function among the services provided those customers. In Texas, imputation as a policy is incorporated in Section 60.061, Utilities Code. (See also **Incumbent local exchange company (ILEC)**.)

Incentive regulation

An alternative to rate of return regulation, having as its intent to move toward a more competitive telecommunications marketplace. Unlike rate of return regulation, which focuses on ensuring a fair profit above costs, incentive regulation typically sets a cap on telecommunications pricing, rather than a cap on profits, offering providers more earnings flexibility and using a profit opportunity as an incentive to innovate in search of greater efficiency and lower costs. An incumbent local exchange carrier in Texas may elect incentive regulation, which is governed by Chapter 58 or 59, Utilities Code, depending on the carrier. (See also **Incumbent local exchange carrier (ILEC)**, **Rate of return regulation**, and **Pricing flexibility**.)

Incumbent local exchange carrier (ILEC)

Originally, one of the local telephone companies that was in existence at the time of divestiture. Under Texas law, the term now refers to a local exchange company that had a certificate of convenience and necessity as of September 1, 1995, the effective date of House Bill 2128. In Texas, this included Southwestern Bell, GTE (now Verizon Southwest), and close to 60 other companies. (See also **Divestiture**, **Local exchange company (LEC)**, **House Bill 2128 (PURA95)**, and **Certificate of convenience and necessity (CCN)**.)

Information service

As defined by federal law (47 U.S.C. Section 153), with relevance to regulatory treatment, “the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications.” The law elaborates that the term “includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service.” The distinction between an information service and a telecommunications service is key to the Brand X case pending in the U.S. Supreme Court. (See, in comparison, **Telecommunications service** and **Cable service**. See also **Telecommunications**, **Brand X**, **Open Access**, and **Universal Service Fund (USF)**.)

Infrastructure commitment

Referring collectively to the set of commitments, applicable to an incumbent local exchange carrier (ILEC) that elects incentive regulation, established by Subchapters F and G of Chapter 58, and Subchapters C and D of Chapter 59, Utilities Code. The commitments include capital investment in digital, broadband, and switching infrastructure, as well as specified broadband and other special services that are to be provided at statutory discount rates to educational institutions, libraries, nonprofit telemedicine centers, and either public and nonprofit hospitals (Chapter 58 ILECs) or specified consortia (Chapter 59 ILECs). (See also **Incumbent local exchange carrier (ILEC)**, **Incentive regulation**, **Digital**, **Broadband**, and **Telemedicine**.)

Instant messaging (IM)

A telecommunications service that enables an Internet user to be alerted that someone from a specified private list is online and allows the user to engage in real-time text-based communications with that person.

Integrated services digital network (ISDN)

A set of technical standards and associated technology for digital connection over the public telephone network, allowing simultaneous voice, data, and video traffic. With ISDN, the user can talk to one person and simultaneously send data to another via the same line.

Interconnection

The connection of one telecommunications carrier’s network to another so as to allow telephone calls to bridge the two networks. The term includes, for instance, the interconnection of two companies’ networks, sometimes even through an intermediary company’s network (e.g., MCI and the former GTE, through Southwestern Bell). It may involve the interconnection of two technologies (e.g., the linkage of a cellular carrier’s wireless network with the traditional wire system of the local telephone company). Interconnection is accomplished by interconnection agreements between companies, approved or arbitrated by the Public Utility Commission of Texas. (See also **Network effect**, **Kingsbury Commitment**, and **Collocation**.)

Interexchange carrier (IXC)

A telephone company that carries long-distance calls, interLATA or intraLATA, between exchange areas. Initially, the term applied to the major long-distance carriers such as AT&T, MCI, or Sprint, but now applies also to an incumbent local exchange carrier that has qualified to provide long-distance service and to a certificated telecommunications utility to the extent it is providing such service. (See also **Exchange area**, **Local access transport area (LATA)**, **InterLATA**, and **IntraLATA**.)

InterLATA

Referring to telecommunications services, equipment, traffic, functions, or revenues that originate in one local access transport area (LATA) and terminate in another LATA or outside a LATA. (See also **IntraLATA** and **Local access transport area (LATA)**.)

Intermodal competition

In telecommunications, the competition between traditional wire line or land line telephone companies and alternative market participants such as cable, fiber, and wireless competitors.

Internet backbone

A very high-speed Internet network spanning the globe, linking major metropolitan areas and provided by major Internet service providers (ISPs). Other ISPs connect directly to the backbone, or to a larger ISP with a backbone connection. (See also **Internet service provider (ISP)**.)

Internet service provider (ISP)

A company that provides commercial access to the Internet, frequently coupled with e-mail or other services such as the hosting of web pages. ISPs are not regulated as common carriers, and ISPs using the telephone system, unlike long-distance companies, do not pay access charges to local exchange carriers. (See **Common carrier**, **Access charges**, and **Internet backbone**.)

Interoperability

The ability of telecommunications equipment from several different vendors to work together using a common set of protocols.

IntraLATA

Referring to telecommunications services, equipment, traffic, functions, or revenues that originate and terminate within the same local access transport area (LATA). An intraLATA tolled call originates and terminates within the same LATA but covers a greater distance than a local call yet is not billed as a long-distance call. (See also **InterLATA** and **Local access transport area (LATA)**.)

ISDN

See **Integrated services digital network (ISDN)**.

ISP

See **Internet service provider (ISP)**.

IXC

See **Interexchange carrier (IXC)**.

Joint Interim Committee on Telecommunications and the Public Utility Commission

A joint committee of the Texas Senate and Texas House of Representatives, co-chaired by Senator David Sibley and Representative Curtis Seidlits, that spent the 1994 interim assessing major changes in the telecommunications industry. The committee produced a report that served as much of the basis for the enactment of House Bill 2128 in 1995. (See also **House Bill 2128 (PURA95)**.)

KHz

See **Kilohertz (KHz)**.

Kilobit

A unit of information equal to one thousand bits. (See also **Bit**, **Megabit**, and **Gigabit**.)

Kilohertz (KHz)

A unit of frequency equal to one thousand hertz. (See also **Hertz (Hz)**, **Megahertz (MHz)**, and **Gigahertz (GHz)**.)

Kingsbury Commitment

A 1913 settlement between the Bell system and the U.S. Department of Justice that averted a federal antitrust suit while establishing a single long-distance telephone network under AT&T. Pursuant to the settlement, AT&T severed ties with Western Union, divesting itself of the controlling interest it had acquired, thus splitting the telephone and telegraph industries. The agreement provided for AT&T interconnection with other independent telephone companies, thus enabling any telephone nationally to reach any other telephone, and it precluded AT&T purchase of any such companies except with federal government approval. The Kingsbury Commitment established the basic structure of the U.S. telephone industry that remained intact until divestiture in 1984. (See also **Interconnection** and **Divestiture**.)

LAN

See **Local area network (LAN)**.

Land line

Referring to voice, video, or data transmission technology that relies on wires; also called wire line.

Last mile

For purposes of advanced services or Internet access, the physical or wireless connection between (1) a home or office customer and (2) the local exchange company's central office, the neighborhood node of a cable company, or an Internet service provider. (See also **Middle mile**, **Advanced services**, **Central office**, and **Internet service provider (ISP)**.)

LATA

See **Local access transport area (LATA)**.

Leased circuit

See instead **Private line**.

LEC

See **Local exchange carrier (LEC)**.

LFA

See **Local franchising authority (LFA)**.

Lifeline

Referring to a state program, in concert with local telephone companies under rules of the Public Utilities Commission of Texas (at 16 TAC Section 26.412), to help low-income people to pay the monthly cost of basic telephone service. Presently, eligible beneficiaries receive a discount of up to \$7 on their monthly bills, for which the participating carriers are reimbursed in equal parts from the Texas Universal Service Fund and from the federal Universal Service Fund, and a waiver of the federal subscriber line charges. (See also **Subscriber line charge (SLC)**, **Texas Universal Service Fund (TUSF)**, **Universal Service Fund (USF)**, and **Link-Up program**.)

Link-Up program

A federal program supported by the Universal Service Fund, which is an adjunct to Texas lifeline service and offers a discount for telephone installation charges to low-income persons. The eligible beneficiary receives a 50 percent discount off the customary charge, up to a maximum of \$30. (See also **Lifeline** and **Universal Service Fund (USF)**.)

Local access transport area (LATA)

One of more than 160 telephone service areas in the United States, including 16 in Texas, into which Bell system territories were divided by the modified final judgment in 1984. Originally, divestiture under that judgment limited the long-distance service of Bell operating companies to calls within the same LATA (intraLATA calls), prohibited them from providing long-distance service between LATAs (interLATA calls), and required that calls leaving a LATA and destined elsewhere be passed to an interexchange carrier (e.g., AT&T, MCI, Sprint). The modified final

judgment eventually was superseded by the federal Telecommunications Act of 1996, and since passage of that law, Southwestern Bell Texas (SBC Texas) has satisfied conditions set forth in a statutory checklist and has gained entry to the interLATA long-distance market, overturning the prohibition under which it previously operated. (See also **Divestiture**, **Modified final judgment (MFJ)**, **InterLATA**, **IntraLATA**, **Checklist**, **Interexchange carrier (IXC)**, and **Service market area (SMA)**.)

Local area network (LAN)

A data communications network within a limited geographic area, usually confined to a single building or several adjacent or connected buildings. (See, in comparison, **Wide area network (WAN)**.)

Local calling area

See instead **Home coverage area**.

Local exchange carrier (LEC)

The local telephone company, either a Bell operating company or an independent company, that provides subscriber lines, local calling services, and switching of voice and data communications service. LECs dominate local telephone service, particularly wired service, within their exchange areas and local area access transport areas. (See, in contrast, **Interexchange carrier**. See also **Exchange area** and **Local access transport area (LATA)**.)

Local franchising authority (LFA)

A city or other governmental unit that franchises local cable television service, establishes franchise fees, and regulates rates for the basic service tier. The LFA typically also regulates installation and service charges and has jurisdiction with respect to complaints and consumer matters. It does not regulate rates for premium service tiers or cable channels. (See also **Basic service tier**.)

Local loop

The telephone line connecting a customer's premises to the local telephone company's central office, so as to provide access to the public switched telephone network. (See also **Central office** and **Public switched telephone network (PSTN)**.)

Local toll call

A toll call outside one's local calling area, accomplished by dialing "1" and then the seven-digit number, skipping the area code. A local toll call connects two numbers within the same local access transport area or service market area. The term excludes calls using extended metropolitan service or expanded local calling, which are billed according to a flat monthly surcharge rather than a usage sensitive per-minute toll. (See also **Local calling area**, **Local access transport area (LATA)**, **Service market area (SMA)**, **Extended metropolitan service**, **Expanded local calling**, and **Usage sensitive**.)

Long run incremental cost (LRIC)

As defined by rule of the Public Utility Commission of Texas (16 TAC Section 26.5), the change in a telecommunications company's total costs of producing an increment of output in the long run, when the company uses least-cost technology. The LRIC plays various roles in the Utilities Code as a cost standard for telecommunications pricing. Technical variations include total service long run incremental cost (TSLRIC) and total element long run incremental cost (TELRIC).

LRIC

See **Long run incremental cost (LRIC)**.

Market power test

A set of criteria applied by the Public Utility Commission of Texas to determine whether a carrier is dominant for a specific telephone service in a certain geographic market area. Test criteria are given in Section 52.203, Utilities Code. (See also **Dominant carrier**.)

Measured service

Telephone service that is based on usage sensitive pricing. (See also **Usage sensitive**.)

Megabit

A unit of information equal to one million bits. (See also **Bit**, **Gigabit**, and **Kilobit**.)

Megahertz (MHz)

A unit of frequency equal to one million hertz. (See also **Frequency**, **Gigahertz (GHz)**, and **Hertz (Hz)**.)

MFJ

See **Modified final judgment (MFJ)**.

MHz

See **Megahertz (MHz)**.

Microprocessor

An electric circuit, usually on a single chip, that performs arithmetic, logical, and control operations, customarily with the assistance of internal memory.

Microwave

An electromagnetic wave in the radio frequency spectrum between 890 Megahertz and 20 Gigahertz. Microwave signals travel in straight lines and thus, in non-satellite systems, require a network of repeater towers situated about every 30 miles. The term sometimes is used to

refer either to the frequency range in the spectrum itself or to the transmission of radio signals in that range. (See also **Frequency**, **Spectrum**, **Bandwidth**, **Hertz (Hz)**, **Megahertz (MHz)**, and **Gigahertz (GHz)**.)

Middle mile

For purposes of advanced services or Internet access, the physical or wireless connection between (1) an Internet service provider, a local exchange company's central office, or the neighborhood node of a cable company, and (2) the Internet backbone. (See also **Last mile** and **Internet backbone**.)

Migration

The preservation of digital content or functionality by transferring it from an existing generation of hardware or software to succeeding technologies.

Modem

An acronym for modulator/demodulator, a piece of computer equipment that converts digital signals into analog signals and vice versa. Modems are used to send data signals (digital) over the telephone network, the local loop of which is almost always analog. (See also **Analog**, **Digital**, and **Digitalization**. See, in contrast, **Cable modem**.)

Modified final judgment (MFJ)

The 1982 consent decree that provided for the divestiture of the former Bell system. (See also **Divestiture**.)

Moore's law

An approximate empirical observation, originally from Gordon Moore who founded Intel, that technological advance in the semiconductor industry—specifically the data density of integrated circuits—doubles approximately every 18 months. As originally conceived, it was the prediction that the number of transistors per square inch on integrated circuits would double every year, which later was revised to every two years.

NANP

See **North American numbering plan (NANP)**.

Narrowband

As used currently, telecommunications technology with transmission capacity (i.e., bandwidth) equivalent to trunk level 1 (T-1), or 1.544 megabits per second, or less. The term, like its counterpart **Broadband**, has always had an imprecise meaning, with the associated bandwidth threshold changing as technology has changed. At one time, for example, narrowband referred to bandwidth of 64 kilobits per second or less. (See also **Bandwidth**, **Broadband**, **Trunk level 1 (T-1)**, **Megabit**, and **Kilobit**.)

National Television System Committee (NTSC)

An industry committee that, with approval of the Federal Communications Commission, defined imaging standards for telecasts in the early days of television. The NTSC standard is used mainly in North America and Japan. Many parts of the world use other standards, notably Phase alternate line (PAL) or Sequential Couleur Avec Memoire (SECAM). A VHS or videocassette, in order to be played on a standard American-owned television, must follow NTSC format rather than a PAL, SECAM, or other format. (See also **High definition television (HDTV)**.)

Network effect

The implication, from being part of a telecommunications network, that the usefulness of an associated product is proportionate to the number of other users in the network and can disappear as the number of the users of that product decreases. In the early history of telephones, for example, before all local systems and numbers were interconnected, users tended to select the same company as did their intended telephone contacts, such that companies with fewer customers tended to die out or be absorbed by companies with growing customer bases. (See also **Interconnection**.)

No-call lists

Texas and federal lists of residential and business telephone customers who sign up to bar unsolicited calls from telemarketers. The Public Utility Commission of Texas applies a small charge for a subscriber to be placed for a three-year period on the state list. The Federal Trade Commission maintains the federal list, placement on which is free of charge and has a five-year duration. Certain callers such as charities are exempt from the application of one or both lists. The Federal Communications Commission separately prohibits telemarketer calls to cellular telephone owners.

Node

In information technology, a computer, router, packet switch, or other device that is situated as a point of connection into a network, with the type of device being dependent on the type of network to which it connects.

Nonbasic services

In Texas, a category of 22 telephone services specified by Section 58.151, Utilities Code, comprising services not included as basic network services under Section 58.051, Utilities Code. Nonbasic services represent the merger, under Senate Bill 560 (Chapter 1212, Acts of the 76th Legislature, Regular Session, 1999) of the former categories of discretionary and competitive services that had been established by House Bill 2128. (See also **Basic network services** and **House Bill 2128 (PURA95)**.)

North American numbering plan (NANP)

The numbering system for telephones for the United States, Canada, Bermuda, the Bahamas, and most Caribbean nations, excluding Mexico, Cuba, and Central America. The system includes a three-digit area code, a three-digit exchange or central office identifier (exchange prefix), and a four-digit subscriber identifier (subscriber number). (See also **Central office**, **Exchange area**, **Exchange prefix**, **Subscriber**, **Subscriber number**, and **Overlay area code**.)

NTSC

See **National Television Service Committee (NTSC)**.

Number conservation

The taking of measures by government and industry, as customers add cellular telephones, pager numbers, and supplementary telephone lines, to avoid the exhaustion of available numbers given a fixed set of digits. For example, a new provider in a market typically is granted its own three-digit exchange prefix, and all of the 10,000 four-digit subscriber number combinations that go with that prefix, even though the new provider may have nowhere close to 10,000 customers. One method of number conservation is to grant different providers the same three-digit exchange prefix and one or more accompanying blocks of 1,000 four-digit subscriber numbers (e.g., XXX-8000 through XXX-8999). (See also **Exchange prefix**, **Subscriber number**, and **Overlay area code**.)

Number portability

The ability of a customer, under the federal Telecommunications Act of 1996, to retain one's telephone number at the same location when changing the customer's local telecommunications carrier. Number portability also allows a customer to retain a number when changing location within the same local area or when moving from one type of service to another.

Office of the Public Utility Counsel (OPUC)

A Texas state agency, separate from the Public Utility Commission of Texas (PUC), that is mandated statutorily to represent the interests of residential and small commercial customers in utility matters before the PUC, the courts, and other utility regulatory agencies.

One-Call Board of Texas

The registered name of the board of directors of the Texas Underground Facility Notification Corporation, charged under Chapter 251, Utilities Code, to provide a single entity through which excavators can give notice of a planned excavation. Utility companies with underground lines in the area, other than water and sewer, are notified in turn and thus are given a chance to mark the location of those lines or take other precautions to avoid any accidental damage.

Open access

A cable modem Internet issue, as yet unresolved, concerning whether cable television companies providing Internet access through their affiliated Internet service providers (ISPs) should be required to make their cable accessible to competing ISPs in the same manner that incumbent local exchange carriers must make their telephone lines accessible to competitive local exchange carriers. Important to the issue is the legal difference between a telecommunications service and an information service, which will be reviewed by the U.S. Supreme Court in 2005 in the Brand X case. So far, the major imposition of an open access requirement has been as a condition of AOL-Time Warner merger approval. Time Warner must allow its broadband cable subscribers to choose Internet service providers other than its own Roadrunner service. (See also **Cable modem**, **Internet service provider (ISP)**, **Telecommunications service**, **Telecommunications**, **Information service**, and **Brand X**.)

OPUC

See **Office of Public Utility Counsel (OPUC)**.

OTARD rules

Federal Communications Commission rules relating to restrictions on the placement of consumer-owned satellite dishes and other types of antennas. The acronym stands for “over-the-air reception devices.” The rules prohibit local governments, landlords, and community associations from restricting installation and use of such devices by property owners or tenants in certain situations on certain properties where the antenna user has exclusive use or control.

Over-the-air reception devices (OTARD)

See **OTARD rules**.

Overlay area code

A second area code that can be assigned to a geographic region already served by an existing area code, when accumulating exchange prefixes and subscriber numbers in the existing code threaten to exhaust available number combinations. With overlay area code, existing telephone lines keep their same area codes, exchange prefixes, and subscriber numbers, while new lines take the new overlay area code and begin reusing the various combinations of exchange prefixes and subscriber numbers. Customers calling long-distance into the geographic region still dial the same amount of digits, but customers calling within the geographic region have to dial three extra digits to specify either the original area code or the overlay area code. (See, in contrast, **Geographic split method**. See also **North American numbering plan (NANP)**, **Number conservation**, **Exchange prefix**, **Subscriber number**, and **Permissive dialing**.)

Packet switching

A method by which data is sent over a network, disassembling it into individual packets each having a unique identifier and carrying a destination address, the various packets then taking different routes to the destination and eventually being reassembled in the proper sequence on arrival regardless of the order of their arrival.

Pay-per-call information service

As defined in Texas by Section 55.127(d), Utilities Code, a service that routinely delivers, for a predetermined and sometimes time-sensitive fee, a prerecorded or live message or interactive program after the caller dials a specified 900 or 976 number. Rules of the Public Utility Commission of Texas (16 TAC Section 26.124) require a dominant certificated telecommunications utility, on request of a telephone user, to block dialing access to all such 900 and 976 services. (See also **Dominant carrier** and **Certificated telecommunications utility**.)

Pay telephone service (PTS)

Service from Texas pay telephones, provided either by a holder of a certificate of convenience and necessity or a registrant under Subchapter H, Chapter 55, Utilities Code. With deregulation and the increase in cellular telephones, incumbent local exchange carriers have reduced the

number of their pay telephones, eliminating uneconomical ones, including some in public buildings and other places that could be designated as public interest pay phones. Cities, counties, and private property owners in selected cases are installing units to fill PTS gaps and are regulated by the Public Utility Commission of Texas under Subchapter H, as are other PTS providers. (See also **Certificate of convenience and necessity (CCN)** and **Incumbent local exchange carrier (ILEC)**.)

PBX

See **Private branch exchange (PBX)**.

Permissive dialing

The grace period, after an area code change, during which subscribers within the area affected by the change can be reached by dialing either the old or new area code.

PIC

See **Primary interexchange carrier (PIC)**.

PICC

See **Presubscribed interexchange carrier charge (PICC)**.

Plain old telephone service (POTS)

Basic telephone service, consisting of a single voice line, using a standard telephone, and access to the public switched telephone network. (See, in comparison, **Basic local telecommunications service (BLTS)** and **Basic network services**.)

Plant

The entirety of equipment used by a telephone company to provide telecommunications service. A carrier's total capital investment in its plant, less depreciation, forms the dollar base on which it is entitled to earn a reasonable rate of return. (See **Rate base** and **Rate of return regulation**.)

Point of presence (POP)

Generally, a contact location where a telecommunications carrier has a presence for network access by its customers. The term refers particularly to the physical site where an interexchange carrier or a cellular provider connects to the network of a local exchange carrier, or where an Internet service provider connects to the Internet. (See also **Interexchange carrier (IXC)**, **Internet service provider (ISP)**, and **Local exchange carrier (LEC)**.)

Pole attachment

Per 47 U.S.C. Section 224, an attachment by a cable television system or telecommunications provider to a pole, duct, conduit, or right-of-way that is used for wire communications and is

owned by a local exchange carrier, electric utility, gas utility, water utility, steam utility, or other public utility, excluding a railroad, cooperative, or state or federal government entity. Rates, terms, and conditions for pole attachments are subject to federal or state regulation. (See also **Local exchange carrier (LEC)**.)

POP

See **Point of presence (POP)**.

POTS

See **Plain old telephone service (POTS)**.

Presubscribed interexchange carrier charge (PICC)

A flat rate per-line charge assessed against one's primary long-distance provider and paid to the local telephone company to contribute to the local telephone company's recovery of costs associated with its local loop (through which the long-distance customer's call is connected to the long-distance company's service). Originally it was charged for both residential and business lines. Long-distance companies tended to pass on the PICC directly to their customers in the form of minimum monthly charges, regardless of long-distance usage and counter to a divestiture goal of reducing long-distance charges. Effective July 2000, the Federal Communications Commission, in response, eliminated the PICC for single-line residential and business customers, eliminated the per-line PICC for extra residential lines, and retained only the per-line PICC for multiple business lines (currently a maximum \$4.31 per month per line). At the same time, effective July 2000, the subscriber line charge was increased. The PICC is subject to gradual reduction and ultimate phase-out in most areas. (See also **CALLS order**, **Subscriber line charge (SLC)**, **Flat rate**, **Local loop**, and **Primary interexchange carrier (PIC)**.)

Pricing flexibility

In Texas, the flexibility of an incumbent local exchange carrier (ILEC) to use promotional forms of pricing, including discount pricing, volume pricing, term pricing, zone density pricing, customer-specific contracts, and the packaging of services, subject to certain limitations. An ILEC may use pricing flexibility for either basic network services or nonbasic services or for regulated or unregulated services. (See also **Incumbent local exchange carrier (ILEC)**, **Incentive regulation**, **Basic network services**, and **Nonbasic services**.)

Primary interexchange carrier (PIC)

The company one selects to be one's main long-distance carrier, to which a call is thus automatically routed when one dials a 1+ number. (See also **Interexchange carrier (IXC)**, **Presubscribed interexchange carrier charge (PICC)**, and **Equal access**.)

Private branch exchange (PBX)

A telephone call handling system with capital equipment located at a user's premises, automated to allow a business or organization with or without receptionists to support telephone extensions off a main telephone line. PBX differs from Centrex, in which the equipment is

located at the local telephone company's central office. PBX confers ownership and full control, whereas Centrex without the capital investment can be more affordable in the short run. (See also **Centrex** and **Central office**.)

Private line

A telecommunications transmission path, circuit, or switching arrangement dedicated to a specific customer or user to connect two or more sites, either one site to another or one site to several.

Provider of last resort

Generally, the telecommunications service provider that is obligated to provide basic service to a customer in the absence of the availability or willingness of an alternative provider. In Texas, under Section 54.301, Utilities Code, a provider of last resort is the certificated telecommunications utility that is obligated to offer basic local telecommunications service throughout a defined geographic area. (See also **Certificated telecommunications utility (CTU)** and **Basic local telecommunications service (BLTS)**.)

PSAP

See **Public safety answering point (PSAP)**.

PSTN

See **Public switched telephone network (PSTN)**.

PTS

See **Pay telephone service (PTS)**.

Public safety answering point (PSAP)

A continuously operated center that answers 9-1-1 calls and dispatches emergency response units or relays such calls to the appropriate public safety agencies.

Public switched telephone network (PSTN)

The local, long-distance, and international telephone system, using land lines rather than radio signals, that connects users by a continuous electrical circuit routed through switching centers. (See also **Switch**.)

Public Utility Commission of Texas (PUC)

The Texas state agency which, in the field of telecommunications, regulates telecommunications utilities, oversees 9-1-1 services, and administers the lifeline and Relay Texas (telecommunications relay service) programs. (See also **Lifeline** and **Telecommunications relay service (TRS)**.)

Public Utility Regulatory Act (PURA)

The Texas law governing the regulation of telecommunications and electric utility services, found in Title 2, Utilities Code. PURA was extensively revised by House Bill 2128 in 1995 to begin moving from a regulated to a competitive telecommunications marketplace. (See also **House Bill 2128 (PURA95)** and **Senate Bill 86.**)

PUC

See **Public Utility Commission of Texas (PUC).**

PURA

See **Public Utility Regulatory Act (PURA).**

PURA95

The Texas Legislature's 1995 amendment of the Public Utility Regulatory Act. See **House Bill 2128.**

Rate averaging

The practice of charging uniform rates for land line telephone service, particularly uniform rates for distance sensitive services, by averaging costs for expensive or low-volume routes, areas, and customers and cheaper or high-volume routes, areas, and customers. Rate averaging is consistent with the goal of universal service, since it ensures that all of a provider's subscribers will be charged reasonably comparable rates for interexchange services regardless of the geographic location or type of community in which they reside. (See also **Universal service.**)

Rate base

The total capital investment in operating plant, less depreciation, on which a telephone carrier is entitled to earn a profit under rate of return regulation. (See also **Plant** and **Rate of return regulation.**)

Rate of return regulation

The more traditional form of regulation, prevalent until the mid-1990s but since in decline, under which a telecommunications utility is allowed to collect all of its prudently incurred costs, including a guaranteed fair return on its rate base of invested capital. Under this form of regulation, prices are set with direct reference to a regulated utility's costs. (See, in contrast, **Incentive regulation.** See also **Rate base, House Bill 2128 (PURA95),** and **Telecommunications Act of 1996.**)

RBOCs

See **Regional Bell operating companies (RBOCs).**

Regional Bell operating companies (RBOCs)

The seven regional companies, created by the divestiture of 1984, to take over ownership of the 22 subsidiary Bell operating companies that were allocated among those regions. The seven were Ameritech, Bell Atlantic, BellSouth, NYNEX, Pacific Telesis, Southwestern Bell, and US West. BellSouth is the only RHC that survives in its 1984 form. Southwestern Bell was renamed SBC, and SBC subsequently acquired Ameritech and Pacific Telesis. Bell Atlantic acquired NYNEX, and later GTE, and the combination was renamed Verizon. US West was acquired by Qwest. (Same as **Baby Bells** and **Regional holding companies (RHCs)**. See, in contrast, **Bell operating companies (BOCs)**. See also **Divestiture** and **Modified final judgment (MFJ)**.)

Regional holding companies (RHCs)

Same as **Regional Bell operating companies (RBOCs)** and **Baby Bells**.

Relay Texas

See **Telecommunications relay service (TRS)**.

Remote call forwarding

A telephone service by which a customer has a telephone number but not a telephone in a remote location or even another city, and calls to that number are then forwarded to a telephone or voice mail system at which they are answered. Remote call forwarding can be cheaper, in low-volume situations, than an 800 number. (See, in comparison, **Wide Area Telecommunications Service (WATS)**.)

Resale

A method of market entry whereby a new carrier purchases telecommunications services from a local exchange carrier at wholesale rates and resells them to its customers at retail rates. A resale carrier may seek eventually to become facilities-based, at least in part. (See also **Unbundling** and **Facilities-based**.)

RHCs

See **Regional holding companies (RHCs)**.

Roaming

The capability, if any, to use a cellular phone outside the area covered by one's service contract. Roaming, in some cases, requires an agreement between carriers with technologically compatible systems to permit customers of either carrier to access the other's system. (See also **Cellular telephone service**, **Roaming charges**, and **Home coverage area**.)

Roaming charges

The charges that sometimes apply to roaming, for "hitchhiking" on the system of a carrier other than the provider with whom one has a service contract. (See also **Roaming**, **Cellular telephone service**, and **Home coverage area**.)

Router

With respect to hardware, an intelligent switch that connects two or more computer networks, taking incoming packets of data and functioning as a sorter and interpreter to analyze them and direct them to their appropriate locations, taking into consideration factors such as destination address, packet priority levels, least-cost route, route congestion level, and other network-wide routing variables, hence the name. (See also **Switch**.)

Section 271

A section of the federal Telecommunications Act of 1996 (47 U.S.C. Section 151 et seq.) that created an incentive for the Bell operating companies to cooperate with the mandate to open their networks to local competition by allowing them entry into the long-distance market on the condition that they complete the requirements of a 14-point checklist. (See also **Telecommunications Act of 1996** and **Checklist**.)

Senate Bill 86

A Texas enactment (Chapter 1579, Acts of the 76th Legislature, Regular Session, 1999) that rewrote customer protection laws with respect to telecommunications companies, including protections against cramming and slamming. (See also **Cramming** and **Slamming**.)

Separations and settlements

The set of accounting procedures by which telecommunications property costs, revenues, expenses, taxes, and reserves are apportioned between interstate operations, which are regulated by the Federal Communications Commission, and intrastate operations, which are regulated by state regulatory bodies such as the Public Utility Commission of Texas.

Server

With reference to hardware, a computer that is connected to and shared among a network and is dedicated to the handling of requests from other computers for data, e-mail, file transfers, and other network services.

Service market area (SMA)

A geographic territory, similar to a local access transport area (LATA), created by the Bell system divestiture consent decree but applicable to the GTE (later Verizon) Southwest, Inc., operating area rather than to the Southwestern Bell operating area. There were two SMAs in Texas, in addition to the 16 LATAs. GTE Southwest, like Southwestern Bell, was prohibited from providing long-distance services between LATAs or SMAs. That prohibition, however, has since been removed. (See also **Divestiture**, **Modified final judgment (MFJ)**, and **Local access transport area (LATA)**.)

Service provider certificate of operating authority (SPCOA)

A type of certificate issued by the Public Utility Commission of Texas under Subchapter D, Chapter 54, Utilities Code, to a regulated company other than an incumbent local exchange carrier (ILEC), namely a competitive local exchange carrier (CLEC). House Bill 2128 in 1995

created the SPCOA as well as the certificate of operating authority (COA). The legislative intent in distinguishing the two was to reserve SPCOAs for resale CLECs only, and to reserve COAs principally for facilities-based CLECs. (See the interim report of the Senate Committee on Economic Development, 1996, Appendix B.) The distinction has been largely eroded. SPCOAs are limited to CLECs with no more than six percent of the total intrastate switched market as measured by usage minutes over a 12-month period. The vast preponderance of Texas CLECs operate under SPCOAs, not COAs. (See also **Certificate of operating authority (COA)**, **Resale, Facilities-based, House Bill 2128 (PURA95)**, **Incumbent local exchange carrier (ILEC)**, **Competitive local exchange carrier (CLEC)**, and **Certificate of convenience and necessity (CCN)**.)

Slamming

The practice of changing a customer's local exchange carrier or primary interexchange carrier without the customer's knowledge or consent. Slamming was made illegal in Texas by Senate Bill 253 (Chapter 919, Acts of the 75th Legislature, Regular Session, 1997). (See also **Local exchange carrier (LEC)** and **Primary interexchange carrier (PIC)**.)

SLC

See **Subscriber line charge (SLC)**.

SMA

See **Service market area (SMA)**.

Spamming

The practice of sending unsolicited junk electronic mail, particularly by automated means, to e-mail accounts or to mailing lists, newsgroups, or message boards.

SPCOA

See **Service provider certificate of operating authority (SPCOA)**.

Spectrum

For telecommunications purposes, the full range of radio frequencies over which electromagnetic signals can be sent for radio, television, cellular telephone, wireless Internet, and other types of radio wave communications. (See also **Frequency**, **Spectrum allocation**, **Spectrum assignment**, and **Spectrum auction**.)

Spectrum allocation

Designation by the Federal Communications Commission of a range of radio frequencies for a category of use or uses. (See also **Spectrum**, **Spectrum assignment**, and **Spectrum auction**.)

Spectrum assignment

Authorization by the Federal Communications Commission, within a given spectrum allocation, for the use of specific frequencies or frequency pairs at a specific geographic location. (See also **Spectrum** and **Spectrum allocation**.)

Spectrum auction

The sale by the Federal Communications Commission of defined spectrum space to private entities who submit the highest bids for the rights to specific portions of the spectrum. (See also **Spectrum**.)

Spyware

Software that monitors the use of a computer, usually covertly. Spyware can have legitimate uses, such as to capture keystrokes of an employee suspected of fraud. When activated by an Internet download and placed on one's computer, however, it raises privacy and nuisance issues and also consumes bandwidth and memory.

Streaming

The transferring of data such that it can be processed at the receiving end as a steady and continuous stream without the need to wait for the entire data file to be downloaded. An example is the Internet streaming of audio-video clips where the client browser or processing application such as a media player can begin displaying the data before the entire file has been transmitted.

Subscriber

A telephone or other telecommunications customer.

Subscriber line charge (SLC)

A flat rate per-line charge assessed by the local telephone company to recover interstate costs associated with use of its local loop. The charge varies in Texas, up to a current maximum of \$6.50. For Texas recipients of lifeline service, the charge is waived. (See also **Presubscribed interexchange carrier charge (PICC)**, **CALLS order**, **Flat rate**, **Local loop**, and **Lifeline**.)

Subscriber number

The final four digits of a telephone number. (See also **Exchange prefix**, **Number conservation**, and **Overlay area code**.)

Switch

A mechanical, electrical, or electronic device that opens or closes telecommunications circuits, or completes or breaks an associated electrical path, or selects an associated path or circuit. Automatic switching systems replaced the many operators who, in the early days of telephones, connected calls by using plugs and jacks. (See also **Public switched telephone network (PSTN)** and **Router**.)

Take rate

A marketing term sometimes applicable to the telecommunications industry, referring to the number of premises in a market area that elect to take or subscribe to a service relative to the total number of premises in that market area. The take rate is expressed as a percentage determined by dividing the number of actual subscribers by the number of potential subscribers.

Tariff

A statement, including a schedule of rates and regulations, filed by a telecommunications company with federal or state regulators, that sets forth the services offered by that company and the charges, terms, and conditions governing a customer's use of specific services or facilities that otherwise would be spelled out in individual customer contracts.

Tel-assistance

A former Texas program that funded a percentage reduction in the monthly cost of local telephone service for low-income persons. Tel-assistance was discontinued and its resources transferred to the state's lifeline program by House Bill 2156 (Chapter 1451, Acts of the 77th Legislature, 2001). (See also **Lifeline**.)

Telecommunications

Generally, the sending or receiving of information as signals, sounds, or images by electrical, electronic, or electromagnetic means. As defined by federal law (47 U.S.C. Section 153) with relevance for regulatory treatment, the term means more precisely "the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received." (See also **Telecommunications service**.)

Telecommunications Act of 1996

A comprehensive amendment of the federal Communications Act of 1934. The 1996 legislation dissolved the modified final judgment that had governed Bell system divestiture, substituted provisions by which the Federal Communications Commission could authorize Bell operating companies entry into previously prohibited services, abolished state laws that guaranteed a legal monopoly to incumbent local exchange carriers, set interconnection requirements to foster local competition, and retained via access charges the continuing subsidy of local service by long-distance service. (47 U.S.C. Section 151 et seq.) (See also **Communications Act of 1934**, **Bell operating companies (BOCs)**, **Checklist**, **Incumbent local exchange carrier (ILEC)**, **Interconnection**, and **Access charges**.)

Telecommunications Infrastructure Fund (TIF)

A fund created by House Bill 2128 in 1995 to provide an aggregate \$1.5 billion over a 10-year period for grants and loans to K-12 schools, institutions of higher education, public libraries, and certain hospitals and health care facilities to promote the use of distance learning and telemedicine in Texas. Support for the fund has come from an assessment of 1.25 percent of receipts from taxable sales of telecommunications services. In 2003, the legislature increased the aggregate funding amount to \$1.75 billion. The fund originally was governed by a TIF board,

but the governor in 2003 vetoed its FY2004-2005 appropriations and issued an executive order transferring oversight of remaining TIF financial assistance to the Texas Workforce Commission. The TIF statute (Subchapter C, Chapter 57, Utilities Code) expires in 2005 under the state sunset law unless continued in existence by the legislature under that law. (See also **Distance learning**, **House Bill 2128 (PURA95)**, and **Telemedicine**.)

Telecommunications relay service (TRS)

A state government service, federally mandated by the Americans with Disabilities Act and funded by a surcharge on telecommunications providers, to provide communications links between the hearing and speech impaired and others. In this state, TRS is provided by the Relay Texas program, created in 1989. (See also **Universal service fund (USF)**.)

Telecommunications service

As defined by federal law (47 U.S.C. Section 153), with relevance to regulatory treatment, “the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used.” An interstate telecommunications service contributes to the federal Universal Service Fund, whereas an information service does not. This difference is part of the controversy in the pending Brand X case in the U.S. Supreme Court. (See also **Telecommunications**, **Information service**, **Cable service**, **Brand X**, and **Universal Service Fund (USF)**.)

Telemedicine

The application of telecommunications and computer technology to exchange medical information from one site to another in support of patient care and the education of health care providers. Telemedicine includes consultative, diagnostic, and treatment services, as well as training.

Ten digit dialing

That which is required for the placement of local telephone calls, in preparing for or implementing an overlay area code system. (See **Overlay area code**.)

TEX-AN

The major statewide telecommunications system used by Texas state agencies, under Section 2170.051, Government Code. TEX-AN enables telephone savings, for example, in communications between a state agency’s Austin headquarters and its regional offices.

Texas High Cost Universal Service Plan (THCUSP)

A component of the Texas Universal Service Fund that provides support to eligible telecommunications providers who serve the high-cost rural areas of the state. (See also **Texas Universal Service Fund (TUSF)** and **Eligible telecommunications provider (ETP)**.)

Texas State Publications Depository Program

A program of the Texas State Library and Archives Commission to collect, distribute, and preserve state government publications through depository libraries, the Internet, and other electronic means, to keep the citizenry informed of public affairs. The commission sets standards for publications made available on the Internet and for publications available in an electronic format but not on the Internet. (See also **Z39.50**.)

Texas Telemarketing Disclosure and Privacy Act

Chapter 44, Business & Commerce Code, enacted originally as part of House Bill 472, (Chapter 1429, Acts of the 77th Legislature, Regular Session, 2001). The act includes various protections for Texas telephone customers against unwanted telemarketing calls, including providing a customer the opportunity to be added to the state's "no call" list and prohibiting a telemarketer from blocking, interfering with, or failing to provide caller identification information in the course of certain calls. (See also **No call lists**.)

Texas 271 Agreement (T2A)

See **Checklist**.

Texas Universal Service Fund (TUSF)

A Texas fund, authorized by Subchapter B, Chapter 56, Utilities Code, expenditures from which support affordable service in high-cost rural areas, lifeline assistance, and telecommunications relay service as well as other specialized programs for the deaf or hard-of-hearing. Presently, the fund is supported by a 5.65 percent assessment on intrastate Texas-taxable telecommunications receipts, including those of wireless providers. (See, in comparison, **Universal Service Fund (USF)** relating to the federal counterpart of the TUSF. See also **Lifeline, Telecommunications relay service (TRS)**, **Eligible telecommunications provider (ETP)**, and **Texas High Cost Universal Service Plan (THCUSP)**.)

TexShare

An information resource sharing consortium, maintained by the Texas State Library and Archives Commission under Subchapter M, Chapter 441, Government Code, open to all institutions of higher education, all public libraries within the state library system, and all libraries of nonprofit corporations. TexShare hosts a set of electronic reference indexes enabling Texans, free of charge through local libraries, to conduct electronic library research to locate information on diverse topics beyond that obtainable from the Internet.

THCUSP

See **Texas High Cost Universal Service Plan**.

TIF

See **Telecommunications Infrastructure Fund (TIF)**.

Total element long run incremental cost (TELRIC)

See **Long run incremental cost (LRIC)**.

Total service long run incremental cost (TSLRIC)

See **Long run incremental cost (LRIC)**.

TRS

See **Telecommunications relay service (TRS)**.

Trunk

A telecommunications line that connects two switching systems.

Trunk level 1 (T-1)

A digital transmission link with a signal speed equal to about 1.54 megabits per second in both directions, which consists of 24 individual voice-grade channels each capable of transmitting 64 kilobits of uncompressed voice or data communications per second, or which is typically unchannelized for most data communications, compressed voice, video, Internet protocol telephony, and certain other types of transmission. T-1 is one of a hierarchy of 10 standards for digital transmission in North America, and in the United States and Canada is the same as **Digital signal, level 1 (DS-1)**.

Trunk level 3 (T-3)

Referring to a higher digital signal speed equal to about 43 to 45 megabits per second in both directions. T-3 is equivalent to 28 T-1 channels and can handle the equivalent of 672 voice conversations each at 64 kilobits per second. It requires fiber optic or microwave transmission. In the United States and Canada, T-3 is the same as **Digital signal, level 3 (DS-3)**.

T2A

See **Checklist**.

TUSF

See **Texas Universal Service Fund (TUSF)**.

Twisted pair

Two insulated copper wires that are twisted around each other to reduce electrical interference. Multiple sets of twisted pair wires may be enclosed in a cable. (See also **Coaxial cable** and **High bit rate digital subscriber line (HDSL)**.)

UHF

See **Ultra high frequency (UHF)**.

Ultra high frequency (UHF)

The portion of the electromagnetic spectrum with frequencies from about 300 megahertz to about 3 gigahertz. In television broadcasting, channels 14 and higher use UHF. (See also **Frequency**, **Spectrum**, **Band (frequency)**, **Hertz (Hz)**, **Megahertz (MHz)**, and **Gigahertz (GHz)**.)

Unbundled network elements (UNEs)

The discrete parts of an incumbent local exchange carrier's network, including facilities and equipment, that are unbundled for leasing at cost-based rates. A competitor entering a local market may do so by leasing such elements, which it can combine with telecommunications services acquired for resale, and perhaps with its own facilities-based services, to attract customers. The lessee keeps any access charges paid by long-distance companies that use the UNEs. (See also **Unbundling**, **Resale**, **Facilities-based**, **Access charge**, and **Collocation**.)

Unbundling

Commercially separating discrete facilities and equipment of an incumbent local exchange carrier (ILEC) network for lease to a competitor at their respective individual costs plus a reasonable rate of return for the incumbent carrier. ILECs have an unbundling obligation under federal law, at 47 U.S.C. Section 251(c)(3). The Federal Communications Commission (FCC) sets specific unbundling obligations, a process that has involved substantial litigation, successive rounds of federal court review, and the judicial overturn of parts of the FCC's unbundling orders. The FCC's latest order on the subject, responding to court directives in the USTA II case (*United States Telecommunications Association v. FCC*), was released on February 4, 2005. (See also **Incumbent local exchange carrier (ILEC)**, **Unbundled network elements (UNEs)**, and **Bundling**.)

UNEs

See **Unbundled network elements**.

Uniform resource locator (URL)

The string of characters in the address line of a website or web page.

Universal service

Traditionally, the national goal of providing access to telephone service at affordable rates to virtually every household. The federal Telecommunications Act of 1996 expands the meaning of universal service (47 U.S.C. Section 254) to include nationwide access to advanced telecommunications and information services, including access among low-income consumers and residents of rural and high-cost areas. (See also **Universal Service Fund (USF)** and **Digital divide**.)

Universal Service Fund (USF)

A federal fund, expenditures from which support the provision of telephone service discounts to low-income customers, enhance the telecommunications access of schools and libraries,

promote telemedicine linkage among rural health care providers to urban medical centers, and support telecommunications service in high-cost geographical areas. Telecommunications companies that provide interstate or international services pay into the fund a specified percentage of their interstate and international revenues. (See also **Contribution factor** and **Telemedicine**. See, in comparison, **Texas Universal Service Fund (TUSF)**, **Lifeline**, and **Texas Infrastructure Fund (TIF)**.)

Uplink

The transmission link from an earth station to a satellite. (See, in contrast, **Downlink**.)

Upstream

Generally, the direction of a telecommunications transmission that moves away from a client end user. An example is a purchaser who sends credit card or other information to an Internet seller. (See, in contrast, **Downstream**.)

URL

See **Uniform resource locator (URL)**.

Usage sensitive

Referring to a rate or price for telephone service that is based on relative usage rather than a flat rate or fixed monthly fee, usually considering the frequency and duration of calls and, in some cases, the time of day and the distance of the call. (See also **Measured service**. See, in contrast, **Flat rate**.)

USF

See **Universal Service Fund (USF)**, referring to the federal rather than state fund.

USTA II

See **Unbundling**.

Very high frequency (VHF)

The portion of the electromagnetic spectrum with frequencies from about 30 megahertz to about 300 megahertz. In television broadcasting, channels 2-13 use VHF. (See also **Frequency**, **Spectrum**, **Band (frequency)**, **Hertz (Hz)**, and **Megahertz (MHz)**.)

VHF

See **Very high frequency (VHF)**.

Voice over Internet Protocol (VoIP)

Technology by which telephone calls may be made over an Internet broadband connection. VoIP converts analog voice signals to digital form and transmits them to their final destination over multiple, Internet pathways as multiple discrete data packets by means of packet switching, as opposed to the circuit switching used by the traditional telephone network that routes each call over a dedicated line. Regulatory treatment of VoIP likely will depend on the outcome of the U.S. Supreme Court hearing of the Brand X case. (See also **Broadband**, **Packet switching**, and **Brand X**.)

VoIP

See **Voice over Internet Protocol (VoIP)**.

WAN

See **Wide area network (WAN)**.

WATS

See **Wide Area Telecommunications Service (WATS)**.

Wide area network (WAN)

A data communications network connecting large numbers of geographically remote nodes and local area networks. A WAN might cover a broad metropolitan area or geographically separate metropolitan areas. (See, in comparison, **Local area network (LAN)**. See also **Node**.)

Wide Area Telecommunications Service (WATS)

A telephone service allowing customers with substantial volumes of long-distance calls to make or receive them and be billed on a bulk rather than per-call basis. An 800 line is an example of an IN-WATS line (for incoming calls); a person calling an 800 number is not charged a long-distance toll, but the recipient (the service subscriber) pays a fixed monthly rate for a specified number of hours of usage. An OUT-WATS line is, in effect, a fixed-rate long-distance subscription.

WiFi

See **Wireless fidelity (WiFi)**.

Wireless fidelity (WiFi)

The wireless version of a local area network, which uses one of a family of “802.11” standards developed by the Institute of Electrical and Electronics Engineers. For example, an airport or coffee shop seating area may contain a broadband connection from which wireless access is available, via WiFi, within a radius of a few hundred feet. (See also **Local area network (LAN)** and **Broadband**.)

Wireless 411

Proposed directory assistance for obtaining cellular telephone numbers. Such proposals are a controversial issue from a privacy standpoint and also because cellular telephone users normally are charged or have minutes deducted for incoming as well as outgoing calls.

Z39.50

A protocol of the American National Standards Institute and the National Information Standards Organization used by libraries to facilitate interlibrary database queries. The indexing of state publications under the Texas State Publications Depository Program conforms to Z39.50 search and retrieval standards. Also known as ANSI Z39.50. (See also **Texas State Publications Depository Program**.)

Bibliography and Webliography

Books

Gerald W. Brock. *The Second Information Revolution*. Cambridge, Massachusetts: Harvard University Press, 2003.

Harry Newton. *Newton's Telecom Dictionary*. 20th Updated and Expanded Edition. San Francisco: CMP Books, 2004.

Julie K. Petersen. *The Telecommunications Illustrated Dictionary*. Second Edition. Boca Raton, Florida: CRC Press, 2002.

Reports

Robert W. Crandall and Jerry Ellig. *Texas Telecommunications: Everything's Dynamic Except the Pricing*. Austin: Texas Public Policy Foundation, 2005.

Diane Katz. *A Telecommunications Policy Primer: 20 Comprehensive Answers to 20 Basic Questions*. Austin: Texas Public Policy Foundation, 2005.

Texas. House Committee on Regulated Industries. *Interim Report to the 79th Texas Legislature*. Austin: Texas House of Representatives, 2004.

Texas. House Committee on State Affairs. *Interim Report to the 75th Texas Legislature*. Austin: Texas House of Representatives, 1996.

_____. *Interim Report to the 76th Texas Legislature*. Austin: Texas House of Representatives, 1998.

_____. *Interim Report to the 77th Texas Legislature*. Austin: Texas House of Representatives, 2000.

_____. *Interim Report to the 78th Texas Legislature*. Austin: Texas House of Representatives, 2002.

Texas. Joint Interim Committees on Telecommunications and the Public Utility Commission and the Sunset Advisory Commission. *Texas Alternatives: Competitive and Regulatory Options in Telecommunications and Electric Power*. A Report to the 74th Texas Legislature. Austin: Comptroller of Public Accounts, 1995.

Texas. Public Utility Commission of Texas. *Availability of Advanced Services in Rural and High Cost Areas*. Report to the 77th Texas Legislature. Austin: Public Utility Commission of Texas, 2001.

_____. *Intrastate Switched Access Charges*. Report to the 77th Texas Legislature. Austin: Public Utility Commission of Texas, 2001.

_____. *Report to the Seventy-Fifth Texas Legislature on the Scope of Competition in Telecommunications Markets*. Austin: Public Utility Commission of Texas, 1997.

_____. *Scope of Competition in Telecommunications Markets of Texas*. Report to the 76th Texas Legislature. Austin: Public Utility Commission of Texas, 1999.

_____. *Scope of Competition in Telecommunications Markets of Texas*. Report to the 77th Texas Legislature. Austin: Public Utility Commission of Texas, 2001.

_____. *Scope of Competition in Telecommunications Markets of Texas*. Report to the 78th Legislature. Austin: Public Utility Commission of Texas, 2003.

_____. *Effects of PURA Chapter 58 and Chapter 59 Telecommunications Incentive Regulation*. Austin: Public Utility Commission of Texas, 2005.

_____. *Scope of Competition in Telecommunications Markets of Texas*. Report to the 79th Legislature. Austin: Public Utility Commission of Texas, 2005.

Texas. Senate Committee on Economic Development. *Interim Report on Telecommunications*. Austin: Texas Senate, 1996.

_____. *Report on Telecommunications and Insurance*. Austin: Texas Senate, 1998.

Texas. Sunset Advisory Commission. *Public Utility Commission of Texas, Office of Public Utility Counsel, Telecommunications Infrastructure Fund Board, and Electric Utility Restructuring Legislative Oversight Committee*. Sunset Staff Report. Austin: Sunset Advisory Commission, 2004.

Online Glossaries and Other Web Pages

American Public Communications Council, Inc. (pay telephone terminology)
<http://www.apcc.net/i4a/pages/index.cfm?pageid=266>

Attitude Long Distance (long distance and telephone terminology)
<http://www.attitude-long-distance.com/calltermsall.htm>

BusinessCaller.com (telecommunications terminology)
<http://businesscaller.com/information/abt glossary.html>

Cornell University (digital library terminology)
<http://www.cs.cornell.edu/wya/DigLib/Ms1999/glossary.html>

Federal Communications Commission (telecommunications terminology)
<http://www.fcc.gov/glossary.html>
<http://www.fcc.gov/connectglobe/glossary.html>

HP (computer security terminology)
http://h20239.www2.hp.com/techcenter/security/Security_Glossary.htm

International Association of Privacy Professionals (privacy terminology)
<http://www.privacyassociation.org/docs/CPPglossary.pdf>

Interactive TV (television terminology)
<http://www.itvdictionary.com/a.html>

Mobiledia (cellular telephone terminology)
<http://www.mobiledia.com/glossary/index.html>

National Emergency Number Association (emergency telecommunications terminology)
http://www.nena.org/9-1-1TechStandards/Standards_PDF/NENA_01-002.pdf

Netlingo.com (Internet and computer terminology)
<http://www.netlingo.com/lumenu2.cfm?letter=a>

Public Utility Commission of Texas (telecommunications terminology and telephone billing items)

<http://www.puc.state.tx.us/ocp/telephone/choice/glossary.cfm>

<http://www.puc.state.tx.us/ocp/telephone/choice/phonebill.cfm>

Telecommons Development Group (rural telecommunications terminology)

<http://www.telecommons.com/uploaddocuments/TelecommunicationsGlossary5.doc>

Telephone Tribute (telecommunications terminology)

<http://www.telephonetribute.com/glostele.htm>

The Sharpened Glossary (Internet and computer terminology)

<http://www.sharpened.net/glossary/index.php>

Thaicom (satellite, telecommunications, and broadcasting terminology)

http://www.thaicom.net/eng-glossary/glossary_a.html

WhatIs.com (telecommunications terminology)

http://whatis.techtarget.com/definitionsAlpha/0,289930,sid9_alpA,00.html

WirelessAdvisor.com (wireless terminology)

<http://www.wirelessadvisor.com/Glossary.cfm>

